REQUIREMENTS FOR CHIROPRACTORS INVOLVED AS OCCUPATIONAL HEALTH AND SAFETY CONSULTANTS IN AUSTRALIA.

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Abstract: A literature review was conducted to determine significant factors for chiropractors progressing towards classification as an Occupational Health & Safety (OHS) consultant in Australia.

A number of priority areas for investigation were identified as significant for OHS consultants. These included: work site assessment, risk control and prevention, spinal care awareness and injury prevention, OHS committee, training procedures and induction manuals, ergonomic improvements, stress management, first aid, forklift safety, accident records, job rotation and supervisor training.

Several issues are important considerations where chiropractor's knowledge may be deficient. Lack of awareness of the issues may leave the chiropractor liable for prosecution due to misrepresentation as an OHS consultant.

Key Indexing Terms (MeSH): Chiropractic, OHS, ergonomics.

INTRODUCTION

Traditionally chiropractors have been involved in treatment of spinal conditions. Several recent studies have documented good outcomes for chiropractic management of such conditions (1-6). Reduction in the costs related to back pain was the primary focus due to an estimated 80% of the population suffering acute back pain at some stage in their lives (7-10). Disability due to back problems was estimated to have increased in the United States of America during 1971-1981 by 168%, compared to a population increase of 12.5%(11,12).

Statistics highlight the cost of these injuries in New South Wales, with back injuries accounting for 22% of all injuries and 26% of total costs. Manual handling injuries have an incident rate in males of 8/1,000 workers with 80% of manual handling injuries being spinal, and 98% of manual handling injuries classified as sprain/strain (13).

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Changes in chiropractic education are now giving chiropractors access to additional areas for involvement in spinal care management (14). This has led to chiropractors entering into the OHS arena, where there are many issues of which they may be unaware (15,16).

This study was conducted to assess which factors should be identified by chiropractors involved in preventative occupational health and safety consultancy.

Occupational Health & Safety Act

There is a Federal Act - The Occupational Health & Safety (Commonwealth Employment) Act 1991, which regulates federal public servants, and is administered by Comcare (17). In addition, each state has its own act. For example, in NSW the principal act is the Occupational Health & Safety Act 1983, which is administered by the WorkCover Authority (18). This act has recently been amended to increase the powers of WorkCover inspectors and increase the fines applicable under the act, (19). The amendments have also allowed inspectors to enter workplaces without prior notice and issue a notice to stop plant operations to allow inspection.

The OHS Acts state a duty of care for employers to ensure the health, safety and welfare of employees in the workplace. It calls for employers to take all reasonably practical measures to control risks against all possible injuries in the workplace. The NSW act also gives the WorkCover Authority power to formulate industry codes of practice. Some examples of the codes are the National Code of Practice: Manual Handling 1990 [NOHSC:2005](20); Australian Standard Code of Practice: Manual Handling of Materials[AS 1339-1974] (21). Standards Association of Australia. Health and Safety at work; Principles and Practices 1990 [AS 1470] (22).

Other relevant legislation for OHS includes: Factories, Shops and Industries Act 1962 (23); Construction Safety Act 1912 (24); Coal Mines Regulation Act 1982 (25); Dangerous Goods Act 1975 (26).

OHS development for employers

WorkCover has detailed strategies for OHS development and duty of care for employers' (27). These strategies include:

1. Development of OHS policy which summarises the principles the organisation wishes to uphold.

2. Establishment of OHS committee to allow better communication and consultation between employees and management.

3. Establishment of an employee training strategy, which includes induction programs, emergency procedures, training on safe work practices and evaluation of the effectiveness of the programs.

4. Establishment of hazard identification and workplace assessment strategies. This includes workplace inspections, safety audits, accident investigations, maintenance of accurate injury and accident records. In addition, workplace assessment should consider the potential significance of each of the risks identified to establish a heirachy for control measures.

5. Develop and implement risk control strategies. This should include methods to eliminate or reduce the risk by change or substitution of work practice, and the use of personal protective equipment.

6. The promotion, maintenance and improvement of strategies by continued review of all OHS programs.

1. OHS POLICY

The initial priority is the development of OHS policy for the organisation, which summarises the principles to uphold. An example would be:
"Management's goal is the promotion of health and safety, through well organised and efficient occupational health and safety procedures. These procedures will be established and maintained by the occupational health and safety committee.

Management is aware of the cost-effectiveness of preventative actions in occupational health and safety, and is dedicated to the improvement of the workplace."

2. OHS COMMITTEES

Legislation by the NSW Government has made the use of occupational health and safety committees mandatory for companies with over 20 employees, where the majority of employees want an OHS committee (The OHS Act 1983 Part III, Division 2 Government Printing Office).

An OHS committee has a number of advantages to offer employers and employees. First, it allows all employees an opportunity to take an active role in improving the health and safety of the workplace. It should also increase interest in occupational health and safety by giving active participation to employees, and also allow dissemination of up to date information. This will keep the focus of occupational health and safety high in the minds of employees and should improve general awareness of potential safety issues at the workplace.

Another benefit of the occupational health and safety committee is that it allows for improved communication and therefore better interaction between sections of a company. In developing occupational health and safety committees, it is an advantage if personnel from all sections can be represented. This increase in communication could have substantial effects not only in health and safety, but also in increases in productivity for the company.

An occupational health and safety committee consisting of management, line managers, supervisors and general staff should be organised. The committee should assess many of the areas detailed below. In larger companies, it may be advantageous for each department to have its own OHS committee.

For example, the OHS committee could initiate formal annual safety audits and worksite risk assessment and control (WRAC) programs, including the frequency of bending/twisting, the number of repetitive movements, sustained postures, pushing or pulling of heavy loads, working in awkward postures or conditions, handling large loads (e.g. larger than 500mm wide).

Worksite risk assessment and control programs are based on ranking the probability of an event occurring and the consequences of the event. For example, events can be ranked by a committee.

Worksite risk assessment and control programs (WRAC) ref ESA AGM 1994:

Probability	**Consequences**
A - very likely to occur	1 - Fatality; severe injury
B - common	2 - probably severe injury
C - not common	3 - serious injury
D - rare	4 - minor injury
E - almost impossible	5 - almost no injury

Therefore, events which are very likely to occur and could result in fatality or severe injury (Ranking A1) would be given the highest priority to address, E5 ranking's would be lowest level of priority.

Some typical WRAC issues include:

Problem / Risk	**Classification**
° forklift injury	- C/1-2
° back sprain/strain	- A/2-3
° injury from motor vehicle accidents	- A/2-3
° occupational overuse syndrome	- B/3-4
° occupational stress	- B/3-4

From this ranking system, a plan can be developed within the company's budget to improve each of the specific issues.

Continuing OHS surveys should include the reviewing of average monthly costs of injuries, including direct and indirect costs e.g. loss of potential sales, casual employee rates, administrative costs, increases in workers compensation premiums. This could assess the effectiveness of OHS mechanisms to improve productivity, overall production and decrease the cost of injuries.

Factors, which are often identified, include:

- inadequate or insufficient lifting aids
- inadequate or insufficient training methods and induction procedures
- inexperienced employees
- poor working conditions (ergonomics) and work flow problems
- lack of appropriate warning signs
- "housekeeping" problems, e.g. boxes stored under desks, loose computer cables, storage of heavy items above shoulder height
- occupational stress
- insufficient training for supervisors in regard to their responsibilities
- inadequate OHS policy

To eliminate these factors the replacement or re-design of a task with a safer procedure is the most obvious method to reduce the hazard. For example, cartons could have handles included in their side to facilitate ease of lifting. In addition, a comprehensive induction procedure and employee training methods (detailed below) will help facilitate increases in employee experience as well as motivation to be aware of OHS methods.

3. STAFF TRAINING

Many employees have had little or no OHS training in injury prevention, fire safety and evacuation, accident procedures, rehabilitation, procedures for reporting potential hazards or safety problems.

The traditional role of occupational health and safety is based on "minimum standards compliance" which is now regarded by authorities as being backward and ineffectual. The focus of "modern" occupational health and safety legislation is to encourage active employee participation in occupational health and safety. All of these initiatives can be addressed through an well-organised staff training scheme and the OHS committee.

Policies should be developed for; induction training, job rotation or "multiskilling", casual employee training, availability and use of mechanical lifting aids. Policies should include procedures to train employees on the correct use of machinery, OHS training, fire safety, role of OHS committee in new staff training and ongoing training. A training handbook, which would include copies of the policies as well as detailed information, could be developed.

a) Spinal and repetitive strain injuries

A high frequency of bending/twisting and repetitive movements places the employee in a high-risk category for a sprain/strain injury.

A review of previous OHS audit results will reveal the areas of high injuries levels and significant potential for large compensation claims. Ongoing assessment of changes, which occurred following the audit, is critical. Assessment of injury recording procedures often reveals poor documentation and poor policies for first aid and/or treatment. An understanding of Worksafe AS 1885.1 is important in this regard. Other details of the injury, which should be included, are time of injury versus exact time started work, previous work areas and previous injuries, previous lifting or spinal care training.

The cost of workers' compensation and the OHS related sick leave would probably exceed many $100,000s per annum, for moderate sized companies (300-400 employees). It is reasonable to expect a moderate reduction of this cost if suitable OHS improvements are made.

Periodic staff training on correct spinal cares (every 6 months) to decrease probability of injury. This should also include initial first aid treatment procedure training. In addition, training at induction on correct spinal care and first aid for injuries should be a feature. In addition, there are some aids, which could be purchased to help minimise injuries and speed up material flow and improve productivity.

b) Office Ergonomics

A large majority of workstations have poor ergonomics. Some common problems include: incorrect Visual Display Unit height and angle; incorrect desk height; incorrect chair height; incorrect keyboard height; incorrect VDU & mouse position; lack of footrests; lack of document holders; incorrect lumbar support height; incorrect lumbar support angle; incorrect angulation of seat pan; and isolated others.

Ergonomic training should be provided for all administration and managerial staff. This training would provide each employee the ability to assess their individual workstations and to make appropriate personal changes. In addition, each employee could be made aware of spinal problems due to poor ergonomics, correct exercises to reduce injury and muscle tension/stress, and preventative measures to reduce occupational overuse syndrome.

c) Occupational stress

Stress is a contemporary epidemic inherent in western society, and has previously been documented as being related to hypertension, coronary artery disease, heart attacks, headaches, and psychological and other significant conditions. Stress also places a financial burden on any work place through decreased productivity and efficiency plus increased absenteeism due to stress related illnesses.

Common symptoms for patients with stress related illness are neck tension or pain, headaches, irritability, mood changes, problems with sleeping, interscapular (shoulder blade) or cervico-thoracic pain (upper back), shoulder or arm pain. Many of these symptoms are also commonly associated with chronic musculoskeletal conditions due to poor ergonomics.

The estimated cost of stress is difficult to calculate. However, Comcare Australia, which is an occupational health insurer operated by the Commonwealth Government, estimates that the number of cases of significant work related stress will have doubled by June 1998. These figures are relevant to the public sector and Comcare has estimated that the Commonwealth could face a bill of $82 million per annum. The average cost of a claim for stress today is $25,000 and now represents 25% of Compares' total costs, (46).

Ergonomic training could be adapted to include work-related stress management training. This training would attempt to provide each employee the ability to assess their individual stress levels and to take preventative measures.

4. Establishment of hazard identification

Establishment of hazard identification and workplace assessment strategies. This includes workplace inspections, safety audits, accident investigations, maintenance of accurate injury and accident records. In addition, workplace assessment should consider the potential significance of each of the risks identified to establish a heirachy for control measures.

a) The survey should include:

- reviewing previous OHS audit results
- assessing changes which occurred following the audit
- measuring average monthly costs of injuries, including direct and indirect costs e.g. production down-time, casual employee training, casual employee rates, administrative costs, increases in workers compensation premiums
- worksite assessment, including the amount (%) of sitting and lifting as a normal part of work, ability of the person to change positions, frequency of bending/twisting, number of repetitive movements, sustained pushing or pulling of heavy loads, working in awkward postures or conditions, handling large loads or boxes (>500mm).
- adequacy of job rotation policies
- mechanisms to improve production and productivity
- availability and use of mechanical lifting aids

This list is by no means complete; the survey itself has many parts and normally requires 2-3 page questionnaire per employee.

b) Accident investigation

Assessment of injury recording procedures and documentation or reporting of "near misses" should be undertaken.

c) Accident, injury & illness records

The quality of records kept covering accidents, "near misses", injuries and rehabilitation can often be greatly improved. Apart from requirements under compensation legislation, comprehensive records can help isolate the major cause of repeated injuries and aid in appropriate treatment or rehabilitation advice being given expediently (NB Worksafe AS 1885.1).

d) Fire safety procedures

The quality of procedures covering fire safety and evacuation can often be greatly improved. In addition, adequate and regular maintenance of fire extinguishers is often sub standard.

e) First-Aid requirements

State legislation requires employers to provide first aid facilities in their workplaces. The scale of facilities required varies with the number of employees, however, as a minimum facilities must include:

- a properly stocked first aid box, containing: bandages, Band-Aids, dressings for lacerations, abrasions, burns, contusions and bleeding, butterfly clips, saline washes, scissors, sticking plaster, gauze, eye baths.
- several employees trained in first aid by appropriate organisations (e.g. St John Ambulance Assoc.; Red Cross)
- the names and locations of these officers should be well publicised throughout the organisation. One of these officers should be placed in charge of maintaining the first aid facilities (An allowance is usually paid to do this).

f) Forklift safety

Forklift safety should be a priority because of the potential severity of the resulting injuries. Forklift operator licenses should be reviewed and up-grading or up-dating considered in the light of statutory requirements as minimum standard. In addition, the OHS Committee could discuss implementation of one-way traffic flow through designated areas, so that all employees can be more aware and responsible for forklifts.

g) Exposure

i. Motor vehicles, heavy machinery

Problems associated with high levels of driving include: - whole body vibration, sustained postures, poor lumbar spine support, muscular tension and stress. These problems associated with driving have been demonstrated to be most costly in employees who drive more than 30,000km per year. In addition, problems associated with motor vehicle accidents include musculoskeletal injury causing upper back &/or neck pain, headaches, muscular tension, and stress.

There are several devices available or measures to improve car seats. These include lumbar support cushions, lumbar support pads, "bead chairs" and postural education. A support could be made available for each employee who requests one, but ideally would be supplied to all drivers. In addition, decreasing the total kilometers driven by each employee through job rotation would decrease the cumulative effects of sustained posture and whole body vibration. The OHS committee could investigate the viability of these measures. In addition, encouragement of exercise routines or programs to improve employee fitness can help decrease the cumulative effects and consequently reduce injuries.

ii. Chemical

All companies need to meet requirements under the several National Codes of Practice. For example, the National Codes of Practice: Safe Use of Vinyl Chloride; National Codes of Practice: Control of Workplace Hazardous Substances; National Codes of Practice: Safe Use of Synthetic Mineral Fibres.
There are many issues that need to be considered in chemical safety, as there are thousands of chemicals in use daily sometimes with unique requirements.

iii. Dust and environmental issues

There are many standards in this area, e.g. heat, synthetic mineral fibres, sun. These include National Codes of Practice: Safe Use of Synthetic Mineral Fibres; National Code of Practice: Occupational Cancer and Carcinogenic substances, 1992.

iv. Noise

The Australian Standard AS 1269 (revised 1989) state the level and duration of noise employees can be exposed to in the daily noise dose (DND). For example, a DND of 1.00 is equivalent to an exposure of 90 dBA for eight hours. Some states have DND maximums of 0.33.

v. Lighting

The Australian Standard AS 1680.1 (Interior lighting in buildings) state guidelines for the level of synthetic or natural light necessary. In addition, there are several standards for VDU operation and appropriate lighting requirements.

h) Machine Safety

Several Australian Standards apply in this area, e.g. AS 1893 (guillotines); AS 1473 (woodworking machinery); AS 1788 (abrasive wheels); AS 1895 (portable electrical tools). Naturally, such standards are statutory requirements, which should be regarded as minimum standards.

5. Risk Control Measures

Most of the risk control measures have been mentioned in the WRAC program developed by an OHS committee. Other factors established in a hierarchy of control are discussed below.

a) OHS Services

When organisations grow in size, the employers' responsibilities in regard to OHS issues change. For example, where a factory has over 300 employees or an office has over 500 employees, then the employer must provide a full-time OHS nurse and a part-time OHS doctor. Employers have a responsibility to provide specific OHS services for their employees, which are detailed below.

The main functions of an OHS service can be carried out by either an OHS nurse or doctor depending on the company's size. These functions include general health supervision; monitoring work environment; treatment and rehabilitation; education and counseling; supervision of first aid facilities and training; record keeping; liaison with other departments and senior management.

The duties of an OHS nurse include: recommendations following preplacement health assessments; monitoring employees' health; assessment of employees following return to work; surveillance of employees with special needs (e.g. pregnancy); organisation of immediate and follow up nursing management after injury; referral of employees to health care providers; advising employees on health and hygiene; first aid facilities organisation and training of supervisors and other relevant personnel; establishment and maintenance of health records; establishment and maintenance of OHS injury records; establishment and maintenance of accident prevention programs.

b) Multiskilling or job rotation policies

Consideration could be given to the areas of "multiskilling" or job rotation.

Multiskilling or job rotation practices have been demonstrated to reduce the level of injuries and absenteeism by reducing the level of repetitive movements. It also contributes to increased job satisfaction by reducing the level of work monotony. The loss of time due to training in new work areas are usually greatly offset by increases in productivity by greater job satisfaction.

c) Supervisor Training

Supervisors play an important role in OHS awareness and sustaining commitment of employees to safety issues. Therefore, supervisor training with an emphasis on making OHS a priority is desirable. The training department should make an evaluation of the training programs, over a period of 6 to 12 months. This evaluation could assess employee response to OHS issues and assess changes in attitude with regard to the priority of safety in the workplace.

6. Review

The OHS Committee should assess short and medium term solutions for improvements in health and safety. In addition, the committee can monitor reductions in injuries and improvements in productivity following changes in OHS procedures.

CONCLUSION

There are a number of areas in which chiropractors are well suited to assist in work site assessments to reduce spinal injuries. However, there are many additional areas in which chiropractors may be unaware. This could lead to litigation should the chiropractor give a false impression of being an OHS consultant. Consultants would be reasonably expected to hold expertise in the areas discussed above. Clearly defining the nature of the consultancy would be a wise step.

Figure 1: Statistics from the Workcover Authority of NSW.

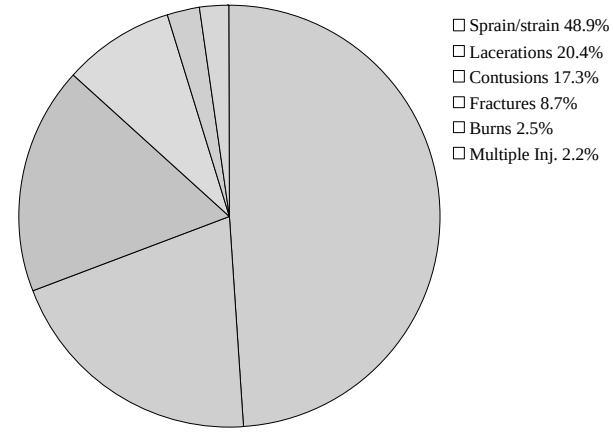

Table 1: The direct cost of an injury

* Payment of medical accounts & 1st weeks salary of the injured worker.
* Difference between the worker's salary & the amount paid by insurance.
* Increases in Worker's compensation levy.
* The cost of the replacement (casual) worker training.
* Low production from changing workers.
* Risk of similar injuries to replacement worker.
* Stress.
* First aid expenses.

Table 2: The indirect cost of an injury

* Difference between losses and amount recovered.
* Rental of equipment to replace damaged equipment.
* The cost of the replacement (casual) worker & training them.
* Production spoiled by accident.
* Idle time of workers disrupted by accident.
* Lowered employee morale.
* Loss of goodwill.
* Unfavourable public relations.
* Payment of higher salary to casual employee replacing the injured worker.
* Loss of skill and experience.
* Increases in administration costs to record/document injury details.
* Time spent on injured workers welfare.

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